Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1- 20 (canceled)

21. (New) An information processing system comprising:

first and second levels of a non-volatile storage hierarchy, wherein accessing information in the first level always consumes more energy than accessing information in the second level; and

a processor configured for writing information to the second level of storage based on energy-conserving criteria and excluding storing only minimally used portions of information.

22. (New) The system of claim 21 wherein the energy-conserving criteria comprise criteria compiled using a heuristic approach.

23. (New) The system of claim 21 wherein the energy-conserving criteria comprise system state information.

24. (New) The system of claim 23 further comprising a storage input/output subsystem and wherein system state information comprises whether the storage input/output subsystem is using one or more specific files.

25. (New) The system of claim 24 wherein the system state information is selected from a group consisting of:

storage input/output data associated with one or more predetermined software applications;

a sequence of storage input/output operations;

observed interactions with the first level of the non-volatile storage hierarchy and wherein the collection of heuristics infer a state of the second level of the non-volatile storage hierarchy; and

a type of energy source powering the system.

26. (New) The system of claim 21 wherein the energy-conserving criteria comprise limiting use of parts of a file system.

27. (New) The system of claim 25 wherein the system stores current user profiles and the system state information comprises whether storage input/output data are associated with a current user profile.

28. (New) The system of claim 25 wherein the system stores current user preferences and the system state information comprises whether storage input/output data are associated with current user preferences.

29. (New) The system of claim 24 wherein the system state information comprises at least one factor from among the following factors:

storage input/output data associated with characteristics of a connection between the first and second levels of the non-volatile storage hierarchy;

the storage input/output data associated with characteristics of a connection between the system and at least one second level of the storage hierarchy;

a proximity of the storage input/output data to events that change the state of the at least one first level of the non-volatile storage hierarchy;

the proximity of the storage input/output data to a previous interaction with at least one first level of the non-volatile storage hierarchy;

an indication of a hard-disk drive spin-down event; and

physical characteristics of the second level of the non-volatile storage hierarchy.

30. (New) The system of claim 23 wherein the system state information comprises physical characteristics of the second level of the non-volatile storage hierarchy.

31. (New) The system of claim 21 wherein the second level of the non-volatile storage hierarchy is implemented using Flash memory.

32. (New) The system of claim 23 wherein the system state information comprises the number of remaining write cycles.

33. (New) The system of claim 21 wherein the processor is for removing information from the second level of the non-volatile storage based on energy-conserving criteria.

34. (New) The system of claim 21 wherein the second level of the non-volatile storage further comprises: a mapping schema between cache files in the second level of the non-volatile storage and disk files in the first level of the non-volatile storage, wherein each cache file is named with a logical cluster number of its corresponding disk file.

35. (New) The system of claim 21, further comprising:

a hard disk drive, the hard disk drive comprising rotating magnetic media comprising the first level of the non-volatile storage and a cache comprising the second level of the non-volatile storage; and

an application-specific integrated circuit for managing the cache according to the energy-conserving criteria.

36. (New) An information handling system, comprising:

first level non-volatile storage for storing information;

second level non-volatile storage for storing information according to a set of energy-saving criteria;

a battery level detector for determining a level of charge in a battery; and

a controller for storing only strategically selected storage data in the second level of the non-volatile storage when the battery level detector determines that the battery charge is below a pre-determined threshold of charge.

37. (New) A method for managing storage of information in an information processing system comprising two levels of non-volatile storage wherein a first level is managed and a second level is unmanaged wherein storing information in managed storage consumes less energy than storing information in unmanaged storage, the method comprising:

monitoring the information processing system to determine whether an operating state of said information processing system satisfies one or more energy-conserving criteria; and

storing only strategically selected storage data in managed storage when the operating state of the information processing system satisfies one or more energy-conserving criteria.

38. (New) A computer readable medium comprising program instructions for:

monitoring a system to determine whether an operating state of the system satisfies one or more energy-conserving criteria;

storing only strategically selected storage data in managed non-volatile storage when the operating state of the system satisfies one or more energy-conserving criteria; and

storing all storage data in non-managed non-volatile storage when the operating state of the system does not satisfy the one or more energy-conserving criteria.

39. (New) An information handling system, comprising:

first and second levels of non-volatile storage, wherein accessing the first level of non-volatile storage uses more energy than accessing the second level of non-volatile storage;

an energy use detector for determining a level of energy being used by the information handling system; and

an arbiter for storing only strategically selected storage data in the second level of the non-volatile storage when the energy use detector determines that the information handling system is being powered by a battery.

40. (New) An information handling system, comprising:

first and second levels of storage, wherein accessing the first level of storage always uses more energy than accessing the second level of storage;

an energy use detector for determining the level of energy being used by the information handling system; and

an arbiter for writing information to the second level storage when the energy use detector determines that the system is being powered by a battery.